**Problem Description**

Many businesses have telephone numbers that, when converted to letters using the telephone keypad, spell something interesting about their company. For example,   
1-800-FLOWERS might be a great number for a florist. But what are the actual digits?

|  |  |  |
| --- | --- | --- |
| 1 | 2 | 3 |
|  | abc | def |
| 4 | 5 | 6 |
| ghi | jkl | mno |
| 7 | 8 | 9 |
| pqrs | tuv | wxyz |
|  | 0 |  |

Write a program that prompts the user to enter a phone number using the format   
1-800-XXXXXXX, where XXXXXXX is a word or a combination of words. Your program will then convert the input to a phone number with only digits and dashes. Then your program will output the corresponding number in digits and dashes. Here is a sample run:

Enter a phone number: 1-800-FLOWERS

The digits are: 1-800-356-9377

Special Note: This program \*must\* include a function, called digit, that converts a given letter to the appropriate digit. This function must be called whenever a conversion is needed.

IPO (Input/Processing/Output) - Describe in detail the exact input(s), the processing that will take place, and the exact output(s). Put these three steps in a numbered list below.

* The input for the program is creating a term named phone\_word and equaling it with an input function to prompt the user to enter a phone number into the program. Another input we need to input is the term phone\_number equal to “1-800-“ which will be used more in the processing section.
* The processing that will take place will be creating a digit function, using the define function, such as def digit(letter) with letter in the parentheses to describe the letters being compared/converted to digits. Next, we would input an if function comparing the lowercase and uppercase letters of “a-c” and returning the number “2” in the term phone\_word if those letters are present in the phone number inputted. After the first if function we would create another function called elif so if the letters that were entered into phone\_word are not “a-c”, then it would check to see if the letters are in the next function. Processing the elif function, the program would compare the letters “d-f” that equal the one’s imputed which causes the function to return the number “3” to the phone\_word. It would do the same method for each of the letters that correspond with the telephone number inputed comparing the ones in the if elif functions/statements to find out what numbers to output using the return function. After the program processes the letters in the def digit function, it will need to add them with the term phone\_number since it already has “1-800” in the term. We would set phone\_number = to phone\_number + the digit(phone\_word[6]) using the 6 in phone\_word to detail the exact letter/digit the program is processing at that point. We would repeat this function 7 times but after the third would add a dash “-“ instead of phone\_word, so the phone number would have a dash to separate the seven digits into three digits and four digits at the end of the function.
* Basically, the outputs for the program will constitute using the print function printing out the statement with an f-string f“The digits are:” and combining that with the end term phone\_number in curly parentheses to print the phone number as the output.

Coding - Write your program in Python using Jupyter Notebook. (Note: This will be in your Python file.)

Testing – Run your program with least three test cases that show that your program is correct. Include screenshots of each test case below.

A screenshot of a computer

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A screenshot of a computer

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Submit the following items to the appropriate Drop Box on Moodle

1. This worksheet after you have answered all the items above (put your answers in bold and red font).
2. Your Python program saved as Program02.py.